



## Teflon® NXT 75 Fluoropolymer Resin Modified PTFE Granular Molding Resin

### Brand

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### Description

*Teflon*® NXT 75 is a chemically modified polytetrafluoroethylene polymer.

When properly processed, *Teflon*® NXT 75 exhibits the superior properties typical of the fluoropolymer resins: nonaging characteristics, chemical inertness, heat resistance, toughness and flexibility, low coefficient of friction, nonstick characteristics, negligible moisture absorption, and weather resistance. In addition, this resin offers weldability, improved resistance to deformation under load, increased resistance to permeation of chemicals, and a higher dielectric breakdown voltage. This resin provides a high degree of weldability for applications where the use of elevated pressure and temperature are limited.

### Typical End Products

*Teflon*® NXT 75 is a fine-cut resin designed for general compression molding of blocks and sheets and for use as a base resin for compounds. It can be used for such applications as: seal rings, valve seats, bearing pads, linings, encapsulations, and as a base resin for filled compounds. This resin is particularly useful in applications where welding of parts to other fluoropolymers such as PFA or standard PTFE is required, e.g., fluid-handling systems.

### FDA Compliance

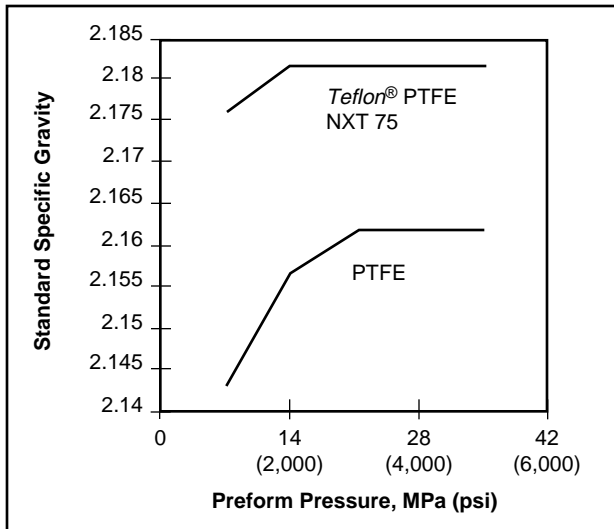
Properly processed products (sintered at high temperatures common to the industry) made from *Teflon*® NXT 75 resin can qualify for use in contact with food in compliance with FDA Regulation 21 CFR 177.1550.

### Processing

*Teflon*® NXT 75 may be converted by compression molding techniques. For instance, a preform is made at room temperature at the recommended pressure of 14 MPa (2,000 psi) and subsequently free sintered. Refer to the typical property data in **Table 1**.

Of particular significance for sheet molding is the fact that maximum density after sintering is reached at lower pressures when compared with nonmodified granulars as shown in **Figure 1**. This allows the production of larger sheets with existing equipment.

**Figure 1. Effect of Preform Pressure on Standard Specific Gravity**



## Safety Precautions

### WARNING!

**VAPORS CAN BE LIBERATED THAT MAY BE HAZARDOUS IF INHALED.**

Before using *Teflon*® NXT 75, read the Material Safety Data Sheet and the detailed information in the “Guide to the Safe Handling of Fluoropolymer Resins,” latest edition, published by the Fluoropolymers Division of The Society of the Plastics Industry—available from DuPont.

Open and use containers only in well-ventilated areas using local exhaust ventilation (LEV). Vapors and fumes liberated during hot processing, or from smoking tobacco or cigarettes contaminated with *Teflon*® NXT 75, may cause flu-like symptoms (chills, fever, sore throat) that may not occur until several hours after exposure and that typically pass within about 24 hours. Vapors and fumes liberated during hot processing should be exhausted completely from the work area; contamination of tobacco with polymers should be avoided.

Mixtures with some finely divided metals, such as magnesium or aluminum, can be flammable or explosive under some conditions.

## Storage and Handling

Preforming is easiest when the resin is uniformly between 21–27°C (70–80°F). As temperature declines below this range, the resin will be increasingly difficult to mold without cracks and problems with condensed moisture. Higher temperatures inhibit flow and promote lumping. Storage conditions should be set accordingly.

Cleanliness is a critical requirement for successful use of *Teflon*® NXT 75. The white resin and high sintering temperatures cause even very small foreign particles to become visible in finished moldings. Keep resin drums closed and clean. Good housekeeping and careful handling are essential.

## Freight Classification

*Teflon*® NXT 75, when shipped by rail or express, is classified “Plastics, Synthetic, O.T.L., NOIBN.” Resin shipped by truck is classified “Plastics, Materials Granules.”

## Packaging

*Teflon*® NXT 75 is packaged in 45-kg (100-lb) drums. Each drum has a bag liner made of polyethylene resin.

**Table 1**  
**Typical Property Data for *Teflon*<sup>®</sup> NXT PTFE Fluoropolymer Resin Grade 75<sup>a</sup>**

<b>Property</b>	<b>Test Method<sup>b</sup></b>	<b>Unit</b>	<b>Nominal Value</b>
<b>General<sup>c</sup></b>			
Bulk Density	D4894	g/L	440
Diameter Shrinkage (at preform pressure of 35 MPa [5,000 psi])	—	%	4.7
Particle Size, average diameter	D4894	μm	33
Standard Specific Gravity	D4894	—	2.17
<b>Mechanical<sup>c</sup></b>			
Tensile Strength	D4894	MPa (psi)	31.5 (4,500)
Elongation at Break	D4894	%	500
Deformation Under Load 14 MPa (2,000 psi) 23°C (73°F), 24 h	D621 Method A	%	3.2
<b>Other<sup>c</sup></b>			
Void Content	FTIR–Infra Red Spectroscopy	%	0–0.5
Dielectric Strength, 76.2 μm (0.003 in) Film	D149	kV/mm (V/0.001 in)	208 (5,200)
Weld Strength (Specimens Welded After Sintering)	D4894	%	66–87

<sup>a</sup>*Teflon*<sup>®</sup> NXT 75 is ASTM D4894, Type III.

<sup>b</sup>ASTM, unless otherwise specified.

<sup>c</sup>These values are based on limited data and are subject to adjustments as additional data become available.

**Note:** Typical properties are not suitable for specification purposes.

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**For more information on Fluoroproducts:****(302) 479-7731**

DuPont Fluoroproducts  
P.O. Box 80713  
Wilmington, DE 19880-0713

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**Europe**

DuPont de Nemours Int'l SA  
DuPont Fluoroproducts  
2, chemin du Pavillon  
P.O. Box 50  
CH-1218 Le Grand-Saconnex  
Geneva, Switzerland  
(022) 7175111

**Japan and Asia Pacific**

DuPont Mitsui Fluorochemicals Co., Ltd.  
Chiyoda Honsha Building  
5-18, Sarugaku-cho 1-chome  
Chiyoda-ku, Tokyo 101 Japan  
81-3-5281-5872

**Canada**

DuPont Canada, Inc.  
DuPont Fluoroproducts  
P.O. Box 2200, Streetsville  
7070 Mississauga Road  
Mississauga, Ontario, Canada  
L5M 2H3  
(905) 821-5925

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**Latin America**

Du Pont Fluoroproducts  
Latin America Regional Office  
P.O. Box 80702  
Wilmington, DE 19880-0702  
(302) 999-3582

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**CAUTION:** Do not use in medical applications involving permanent implantation in the human body. For other medical applications, see "DuPont Medical Caution Statement," H-50102.



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